

Remarks

Claims 1-38 were originally filed. Claims 1, 4, 8, and 38 were previously amended and Claim 7 previously canceled.

Independent Claims 1 and 38 are being further amended herein to specify that exposure of the photoreactive composition (using a multibeam interference (MBI) technique) effects one-photon absorption and photoreaction (basis for this amendment being found, for example, in Paragraph [0049] of the instant patent application publication (US 2005/0124712 A1), which expressly references one-photon photoinitiator systems, and, by the absence of language specifying multiphoton absorption and photoreaction for the MBI exposure, throughout Applicants' specification).

Independent Claims 1 and 38 are also being amended herein to specify that the process further comprises exposure of at least a portion of the photoreactive composition to radiation of appropriate wavelength and intensity to effect multiphoton absorption and photoreaction (for example, to form a controlled or engineered defect; basis for this amendment being found, for example, in Paragraphs [0012] and [0197] of the instant patent application publication, as well as in Claim 36). Claim 36 is being canceled.

Rejections Under 35 U.S.C. Section 103

Claims 1-6, 8-27, and 36-38 were rejected under Section 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/ 0012872 (Fleming et al., hereinafter referred to as Fleming) in view of U.S. Patent Application Publication No. 2003/0151032 (Ito et al., hereinafter referred to as Ito). This rejection is respectfully traversed for the following reasons.

Fleming describes methods for producing a region of at least partially reacted material in a photoreactive composition through multiphoton absorption. In one embodiment, such a method involves the use of an exposure system capable of inducing image-wise multiphoton absorption, wherein the exposure system includes three or more light beams to generate a non-random three-dimensional pattern of light using optical interference from the three or more light beams. The method further includes exposing a photoreactive composition to the three-dimensional pattern to at least partially react a portion of the material in correspondence with the non-random three-dimensional pattern of light incident thereon. (See Paragraph [0022], as well

as Example 8 (which discusses the use of 3-beam interference to form multiple photopolymerized regions by a multiphoton absorption process).)

Ito describes dielectric-forming compositions comprising, for example, ultrafine particle-resin composite particles composed of inorganic ultrafine particles with average particle size of 0.1 micrometer or smaller and a resin component constituted of at least one of a polymerizable compound and a polymer. Part or all of the surfaces of the inorganic ultrafine particles are coated with the resin component, and the ultrafine particle-resin composite particles contain 20 percent by weight or more of the inorganic ultrafine particles.

The Examiner has asserted that the difference between the instant claims and Fleming “is that Fleming does not disclose the use of a plurality of inorganic particles in the photoreactive composition. Ito . . . discloses the use of plural inorganic particles in the photosensitive composition. Therefore, it would be obvious to modify Fleming by including inorganic particles in the photoreactive composition as suggested by Ito because Ito . . . discloses that using inorganic particles in the composition enables improved permittivity.”

Applicants have amended the instant claims, however, to clarify that Applicants’ MBI exposure effects one-photon absorption and photoreaction. Thus, the combination of Fleming and Ito does not provide Applicants’ claimed process for at least the reason that Fleming’s MBI exposure effects multiphoton, rather than one-photon, absorption and photoreaction. Applicants therefore respectfully submit that their amended claims are indeed patentable over this combination of references and respectfully request that the rejection under Section 103 be withdrawn.

Claims 28-35 were rejected under Section 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/ 0012872 (Fleming et al., hereinafter referred to as Fleming) in view of U.S. Patent Application Publication No. 2003/0151032 (Ito et al., hereinafter referred to as Ito) as applied to Claims 1-6, 8-27, and 36-38, and further in view of U.S. Patent No. 4,406,992 (Kurtz et al., hereinafter referred to as Kurtz). This rejection is respectfully traversed for the following reasons.

Kurtz describes a semiconductor pressure transducer or other product employing layers of single crystal silicon. A single crystal silicon substrate is said to have a line grating formed on a surface, and a layer of dielectric is said to be thermally grown on the surface to replicate the

line grating on an opposite surface of the dielectric. A layer of silicon is said to be deposited on the opposite surface. The layer of silicon is said to be of single crystal form due to the presence of the grating structure. The method employed is said to thus enable one to eliminate any intermediate glass bonding layer as well to eliminate polycrystalline structure. The structure and methods are said to result in extremely reliable apparatus capable of high temperature operation while possessing improved mechanical strength. (See Title, Abstract, and Brief Description of the Preferred Embodiment.)

The Examiner has relied upon Kurtz for its description of silicon deposition and has asserted that the subject matter of Claims 28-35 is obvious in view of the combination of Fleming, Ito, and Kurtz. As explained above, however, the combination of Fleming and Ito fails to provide Applicants' claimed process. The addition of Kurtz' silicon deposition does not overcome the deficiencies of Fleming and Ito, and thus the combination of Fleming, Ito, and Kurtz also does not provide Applicants' claimed process. Applicants therefore respectfully submit that their claimed process is indeed patentable over this combination of references and respectfully request withdrawal of the rejection under Section 103.

Concluding Remarks

Reconsideration and allowance of Applicants' claims are respectfully requested.

Respectfully submitted,

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